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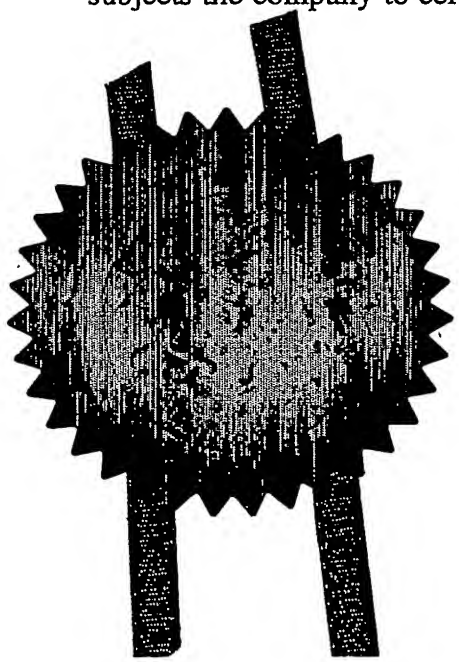

Signed Andrew Gerry

Dated 18 October 2004

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The Patent Office

Cardiff Road
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NP10 8QQ

1. Your reference WB-100

2. Patent application number *(The Patent Office will fill in this part)* 0313996.1 — 17 JUN 2003

3. Full name, address and postcode of the or of each applicant *(underline all surnames)*

BRIAN HARTLEY
12, OAKLEY AVE.
BROCKWELL
CHESTERFIELD
S40 4DS

Patents ADP number *(if you know it)* 5725627002

If the applicant is a corporate body, give the country/state of its incorporation

4. Title of the invention MOTOR POWERED WHEELBARROW

5. Name of your agent *(if you have one)*

"Address for service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*

~~AS ABOVE~~
Swindell & Pearson
48 Friar Gate
Derby
DE1 1GY

Patents ADP number *(if you know it)* 1578001

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Country	Priority application number *(if you know it)*	Date of filing *(day / month / year)*
~~[illegible]~~		

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application	Date of filing *(day / month / year)*

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? *(Answer 'Yes' if:*

a) any applicant named in part 3 is not an inventor, or
b) there is an inventor who is not named as an applicant, or
c) any named applicant is a corporate body.
See note (d))

Patents Form 1/77

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Continuation sheets of this form	
Description	4
Claim(s)	
Abstract	1
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Priority documents	
Translations of priority documents	
Statement of inventorship and right to grant of a patent *(Patents Form 7/77)*	
Request for preliminary examination and search *(Patents Form 9/77)*	
Request for substantive examination *(Patents Form 10/77)*	
Any other documents *(please specify)*	

11. I/We request the grant of a patent on the basis of this application.

Signature B. Hartley Date 16/6/03

12. Name and daytime telephone number of person to contact in the United Kingdom 01246 - 550047

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MOTOR POWERED WHEELBARROW

Wheelbarrows are well-known; they are used to transport materials from one place to another.

The type referred to has one wheel at the front and two handles at the rear.

The Wheel at the front can jam when heavy objects are being transported over rough ground, also the wheelbarrow can be hard to push up hill or when negotiating steps, etc.

The present invention seeks to overcome the problems by allowing the operator of a wheelbarrow to negotiate objects that the wheelbarrow may encounter, and manoeuvre it more easily.

An electric motor is fitted in a suitable position to allow a drive train to be connected to the wheel of the wheelbarrow. The drive train can consist of a belt operating on pulleys between the electric motor and the wheel; it may also consist of a chain or be shaft driven operating gears.

The following example is shown using cogs or toothed pulleys. A small cog or pulley is fitted to the end of the output shaft of a gearbox, which is driven by the electric motor. A second toothed pulley, which is larger, is fitted to the wheel on the wheelbarrow. A third pulley can be fitted if required between the first two pulleys and this can be adjusted to keep sufficient tension on a belt which is placed over the first two mentioned toothed pulleys, so that the belt does not slip.

A battery is fitted in a suitable position on the wheelbarrow and this can be protected by a cover. The battery is connected to a suitable switch which is fitted to one of the handles of the wheelbarrow, and this can also contain a rheostat if required, it is then connected to the electric motor. Suitable strong cable is fitted between the various electrical components and it can be threaded through the frame of the wheelbarrow. A

suitable battery can be fitted according to the voltage operating requirements of the electric motor.

A changeover switch can also be fitted in a suitable position on the wheelbarrow to change the polarity of the wiring, so that the electric motor can be reversed should the wheelbarrow require to be moved backwards, although the operator should still be able to do this by pulling it backwards when the electric motor is switched off. There may be a slight resistance when doing this, although when the electric motor is switched off it may act as a brake when the wheelbarrow is being wheeled down a hill.

Embodiments of the present invention will now be described by way of example only, with reference to the accompanying drawings, in which:

Fig 1. is a side view of a typical wheelbarrow

Fig 2. is a view of Fig 1, and showing the modifications that have been made

Fig 3. is a side view of the drive train casing

Fig 4. is a view from above of the drive train casing

Fig 5. shows the two toothed drive pulleys and belt

Referring to Fig 1

This is a side view of a typical wheelbarrow 10, showing a container 11, a support frame 12, and a wheel 13, a pair of handles 13a, (only one is shown), and two bearings 14a, (only one is shown) to support the wheel.

Referring to Fig 2

This shows the wheelbarrow 10, which has been modified to make it power driven. A casing 14, has been fitted between the frame 12, and the container 11, a flat plate 15, is sandwiched between the two, and four bolts 16, used to secure it. The casing 14, covers the two cogs 32 and 34, and drive belt 35, Fig 5, and the electric motor 17, Fig 4, is bolted to it. The lower section of the casing 14, is bolted 18, to the frame 12, of the

wheelbarrow. A battery box 19, is fixed below the container 11, and a lid 20, which is secured to the box 19, with screws 21. Inside the box 19, is a battery (not shown). A momentary switch 22, is fitted to one of the handles 13a, of the wheelbarrow 10, and this has a cover 23, to protect the switch 22, from any water or dirt that may affect the operation of the switch. Wiring 24, is threaded through a hole (not shown) in the support frame of the wheelbarrow 10, and this is connected between the switch 22, the battery in the box 19, and the electric motor 17.

Referring to Fig 3

This shows the casing 14, that supports and covers the drive train shown in Fig 5. a flat plate 15, is welded or moulded to a box section 25, Fig 4, this has a hole 26, for the drive shaft of the gearbox which is connected to the electric motor 17, Fig 4, to pass through, and a larger hole 27, for the drive to the wheel 13 Fig 1, to pass through. A cover plate 28, is held in place by nine screws 29.

Referring to Fig 4

This shows the casing 14, from above showing the four bolt holes 30, at each corner of the plate 15, for screws 16, Fig 2, to pass to secure it to the frame 12, Fig 2. The electric motor 17, is secured to the box section 25, below the plate 15. Four threaded rods 31, (only 2 shown) pass through a hole 27, in the opposite end of the casing to the electric motor 17, and these are used to secure the large drive cog 32, Fig 5, using the four holes 33 in the cog for this purpose using two nuts at one end of the threaded rods 31. Four holes are drilled in the barrow wheel (not shown) for the other ends of the four threaded rods 31, to fit through and these are secured by the two nuts at the end of each threaded rod 31.

Referring to Fig 5

This shows the drive from the electric motor 17, Fig 4, to the wheelbarrow wheel 13, Fig 1. It consists of a cog 34, which is fitted onto the drive shaft of the gearbox fitted to the electric motor, and a larger cog 32, which is secured to the wheel 13, of the

wheelbarrow. A toothed belt 35, is used to make the drive connection between the two. When the connection is made between the switch 22, Fig 2, by the operator lifting the wheelbarrow using the handles 13, Fig 1, and pressing it, the electric motor 17, Fig 4, powers the wheelbarrow forward. This will occur whilst the battery is charged. If it is required to manoeuvre the wheelbarrow 10, for some distance backwards a switch 36 is fitted to the side of the battery box 19, Fig 2, and this can be used to reverse the polarity of the connection to the electric motor 17.

Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance, it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

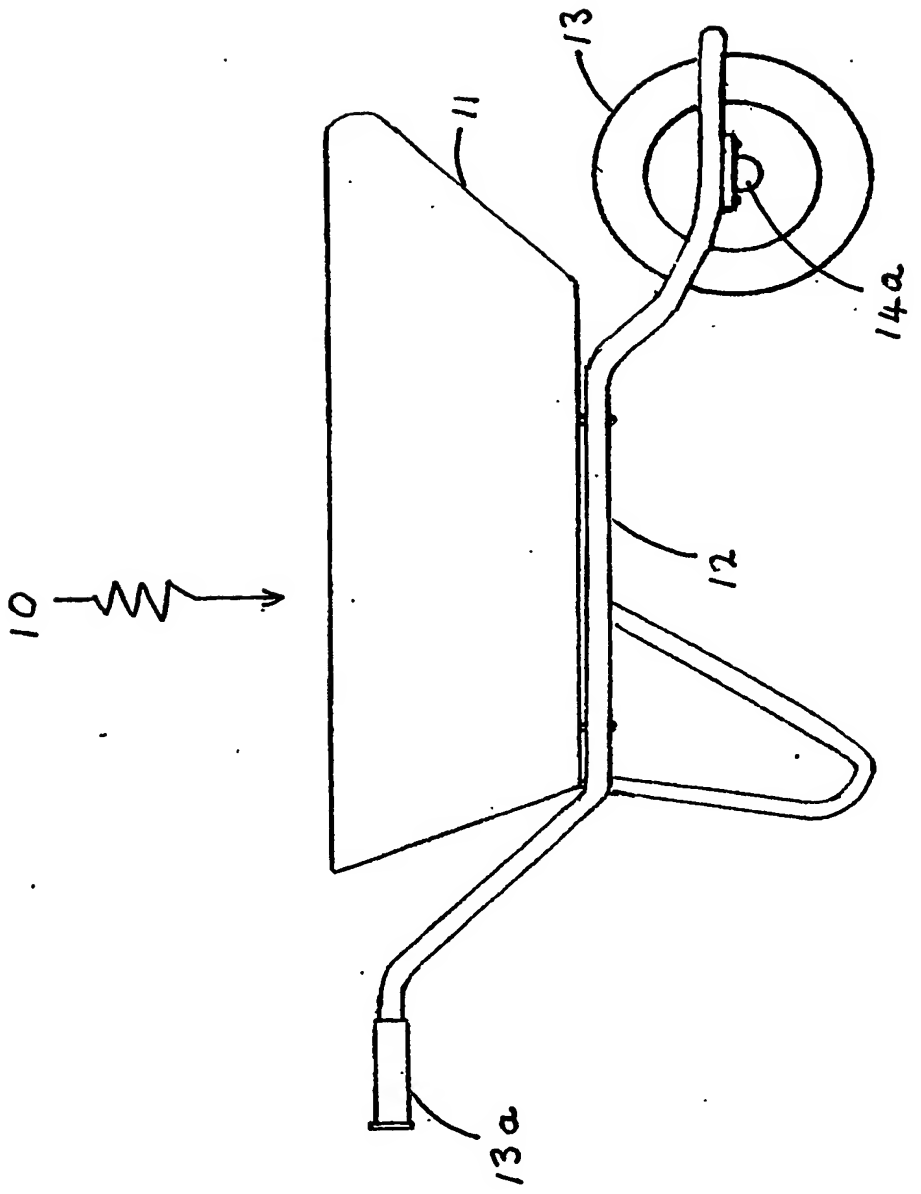

FIG. 1

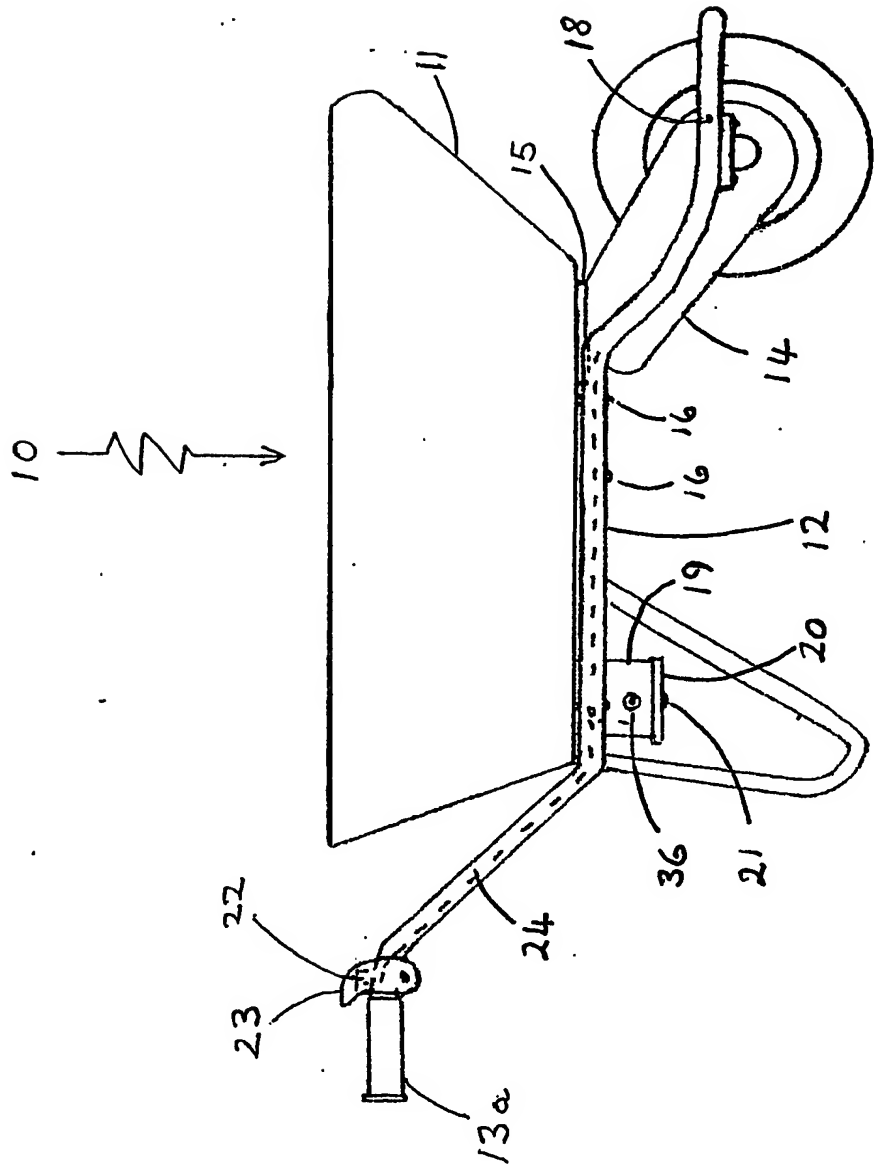

FIG. 2

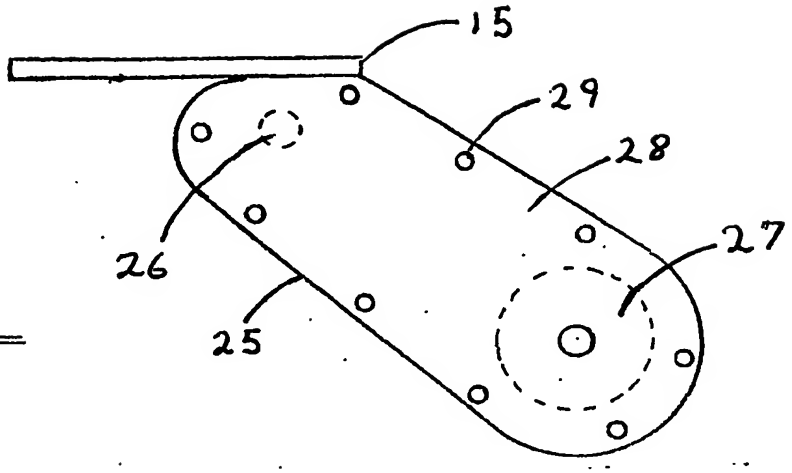

FIG. 3

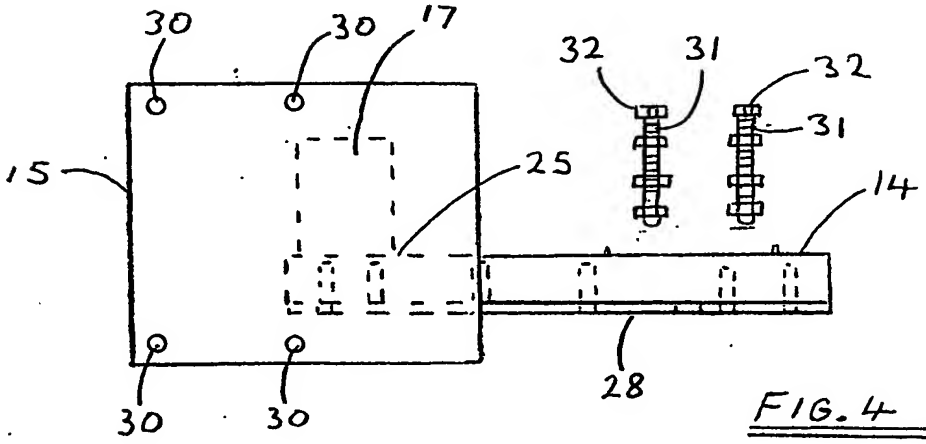

FIG. 4

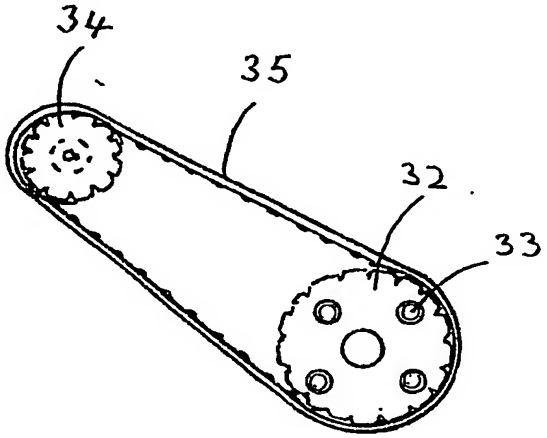

FIG. 5

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